

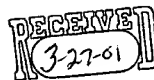
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intermediate representations need not be governed by said rules, further wherein said symbols are selected from the group consisting of mathematical symbols and chemical symbols and biological symbols and economic symbols and alphabetic symbols and numeric symbols and language symbols.

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- 22 The methods of claim 21 wherein said presentation is on a computer controlled display device.
- 23 The method of claim 21, said method further comprising means for calculating said intermediate presentations.
- 24 The method of Claim 21 wherein said animation means are selected from the group consisting of:
- (a) means for moving of said symbol along a prescribed path;
 - (b) means for changing of said symbol to other symbols;
 - (c) means for splitting of said symbol into copies;
 - (d) means for causing said symbol to fade out;
 - (e) means for causing said symbol to fade in;
 - (f) means for adding of pictorial additions to said symbol;
 - (g) means for removing of pictorial additions from said symbol.
- 25 The method of Claim 21 further comprising means for displaying an illustrative animated picture, and further means for synchronizing the animations of said picture with said animations of said representations.
- 26 The methods of Claim 21 further comprising means for accepting user input and responding to user input.
- 27 The methods of Claim 26 further comprising means for changing said display in response to said user input.



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- 28 The methods of Claim 27 further comprising computer controlled voice explanations of said animations, and means of synchronizing said voice with said animations.
- 29 The methods of Claim 28 additionally comprising:
- (a) means for converting text to speech,
 - (b) method and means of using a text script to control the synchronization of said voice with said animations.
- 30 The methods of Claim 29 additionally comprising means for highlighting, in real time, said displayed symbols in synchronism with said voice explanations.
- 31 The methods of Claim 21 wherein said presentation is for use in the teaching of said rules of said transformation.
- 32 The methods of Claim 22 wherein said presentation is for use in the teaching of said transformation rules.
- 33 The methods of Claim 23 wherein said presentation is for use in the teaching of said transformation rules.
- 34 The methods of Claim 24 wherein said presentation is for use in the teaching of said transformation rules.
- 35 The methods of Claim 25 wherein said presentation is for use in the teaching of said transformation rules.
- 36 The methods of Claim 26 wherein said presentation is for use in the teaching of said transformation rules.
- 37 The methods of Claim 27 wherein said presentation is for use in the teaching of said transformation rules.